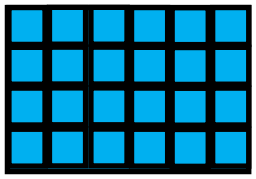
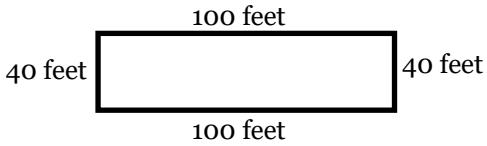
Area & Perimeter

Students understand one square unit can be used to measure area of plane figures. In the example below, students will use the one inch color tiles (unit squares) to measure the area, or space inside, the rectangle.



Students move to relating this to addition and subtraction, describing area as 4 rows of 6 squares =
6 + 6 + 6 + 6 =
4 X 6 = 24.

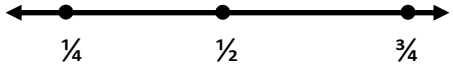
Students also solve real-world math problems involving perimeters of figures, including finding perimeter or finding an unknown side length.



Attributes of Shapes & Fractions

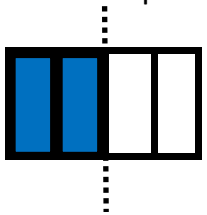
Students understand that shapes may share attributes and that the shared attributes define larger categories. They continue to partition shapes into equal areas and express each part as a unit fraction of the whole.

Students understand a unit fraction 1/b as the quantity of 1 part when the whole is broken into b equal parts. They place fractions on a number line and compare fractions with the same numerator or the same denominator by reasoning about their size.



Students recognize and generate simple equivalent fractions and explain how they know the fractions are equal.

1/2 = 2/4



College and Career Ready Standards for Mathematics

Grade 3

Key Concepts

- Addition and subtraction within 1,000
- Multiplication and division within 100
- Area and perimeter
- Two-dimensional shapes
- Unit fractions

View Grade 3 CCRSM Standards using the short URL or the QR Code below.

https://goo.gl/k1uQDc

Addition & Subtraction Strategies

Partial Sums

227 + 324 =
500 + 40 + 11
500 + 40 = 540
540 + 11 = 551

OR

```
  227
 +324
  500
   40
+  11
  551
```

Partial sums strategies helps students break apart numbers for easier computation. In this example the student added the hundreds first (200+300), then the tens (20 + 20), then the ones (7 +4). Then, these sums were added to find the total.

Compensation

216 + 427 =
216 $^{-3}$ + 427 $^{+3}$ =
213+ 230 = 443

This example shows how to use compensation to solve an addition problem.

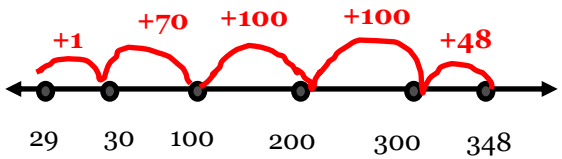
Adding in Chunks

415 + 128 =
415 + (100+20+4+4)
add in chunks
415 + 100 = 515
515 + 20 = 535
535 + 4 = 539

One number is kept whole and the second number is broken into smaller numbers.

Open Number Line

Students use an open number line to count up as a subtraction strategy. Students count up to the larger number (348), starting at the smaller number (28).



To find the answer, add all the jumps (in red) 2 + 70 + 100 + 100 + 48 = 319.

Multiplication & Division Strategies

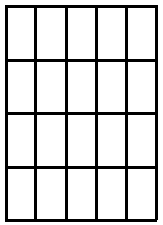
Students learn multiple strategies so they can show their thinking in different ways. 3X 4 =

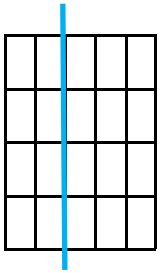
three groups of four 4 + 4 = 8

OR

Use Arrays

Students use arrays to represent multiplication facts. The grid on the right shows a 4 X 5 array. Students learn that facts can be made up of smaller facts.

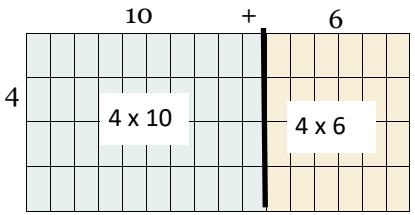




For example, this 4 X 5 grid is split into two arrays, 4 X 2 and 4 X 3. This makes computation easier.

Area Models

Students use area models to show multiplication. Examine 4 X 16.



Students then move in to partial products. 4 x 16 =

(4 x 10) + (4 x 6) =

40 + 24 = 64

Equal Shares & Groups

15 ÷ 5 = 3

Third graders work with equal shares. One strategy that demonstrates equal shares is repeated subtraction.

```
 15
- 5
 10
- 5
  5
- 5
  0
```

Students also make 3 groups, placing one counter in each group until they reach 15.

Related Facts

When dividing, use multiplication facts or tables to find a quotient.

50 ÷ 10 = ? Think ? x 10 = 50

By the end of 3rd grade students should know single-digit products and quotients from memory.